WHAT IS CLAIMED IS:

1. In a fuel cell system having a reformer and water gas shift reactor operably connected to a fuel cell stack wherein hydrocarbon and steam are fed to the reformer to produce water gas for conversion in the reactor to a hydrogen containing gas for use in the fuel cell stack, the improvement comprising:

feeding to the reformer, at start-up, an emulsion composition comprising,

- at least 50wt% of hydrocarbon,
- from 30 to 50wt% of water, and
- from 0.01 to 15 wt% of a surfactant selected from the group consiting of alkyl ethoxylated amine- alkyl aromatic sulfonic acid complex, monoethanol amine-alkyl aromatic sulfonic acid complex and mixtures thereof and represented by the respective formulae,

$$R\text{-}(CH_2)_m\text{-}N\begin{cases}(CH_2\text{-}CH_2\text{-}O)_x\text{-}H\\(CH_2\text{-}CH_2\text{-}O)_y\text{-}H\end{cases}\quad HO_3S\text{-}Ar\text{-}(CH_2)_nR$$

and

$$OH\text{-}CH_2\text{-}CH_2\text{-}NH_2 \quad HO_3S\text{-}Ar\text{-}(CH_2)_nR$$

wherein R is a methyl group, m and n are integers from about 2 to 25, x and y are integers and x+y is from about 2 to 50 and Ar is an aromatic group.

2. The improvement of claim 1 wherein the emulsion further comprises up to 60 wt% alcohol based on the total weight of the said microemulsion wherein said alcohol is selected form the group consisting of methanol, ethanol, n-propanol, iso-proponal, n-butanol, sec-butyl alcohol, tertiary butyl alcohol, n-pentanol, ethylene gylcol, propylene glycol, butyleneglycol and mixtures thereof.

3. The improvement of claim 1 wherein said hydrocarbon is in the boiling range of -1°C to 260°C

4. The improvement of claim 1 wherein said water is substantially free of metal salts.

5. The improvement of claim 1 wherein the emulsion is a bicontinuous microemulsion comprising a coexisting mixture of at least 80-volume % of a water-in-hydrocarbon microemulsion and from 1 to 20 volume % of a hydrocarbon-in-water microemulsion.

6. The improvement of claim 1 wherein said surfactant thermally decomposes at temperatures below about 700°C.

7. A method to prepare a bicontinuous microemulsion comprising a coexisting mixture of at least 80-volume % of a water-in-hydrocarbon microemulsion and from 1 to 20 volume % of a hydrocarbon-in-water microemulsion the method comprising: mixing at mixing energy in the range of $0.15 * 10^{-5}$ to $0.15 * 10^{-3}$ kW/liter of fluid,

- at least 50wt% of hydrocarbon,
- from 30 to 50wt% of water, and

- from 0.01 to 15 wt% of a surfactant selected from the group consisting of alkyl ethoxylated amine- alkyl aromatic sulfonic acid complex, monoethanol amine-alkyl aromatic sulfonic acid complex and mixtures thereof and represented by the respective formulae,

$$
\begin{array}{l}
\qquad\qquad\quad (CH_2\text{-}CH_2\text{-}O)_x\text{-}H \\
\qquad\qquad\quad / \\
R\text{-}(CH_2)_m\text{-}N \quad HO_3S\text{-}Ar\text{-}(CH_2)_nR \\
\qquad\qquad\quad | \\
\qquad\qquad\quad (CH_2\text{-}CH_2\text{-}O)_y\text{-}H
\end{array}
$$

and

$$OH\text{-}CH_2\text{-}CH_2\text{-}NH_2 \quad HO_3S\text{-}Ar\text{-}(CH_2)_nR$$

wherein R is a methyl group, m and n are integers from about 2 to 25, x and y are integers and x+y is from about 2 to 50 and Ar is an aromatic group.

8. The method of claim 7 wherein mixing is conducted by an in-line mixer, static paddle mixer, sonicator or combinations thereof.

9. The method of claim 7 wherein said mixing is conducted for a time period in the range of 1 second to about 15 minutes.

10. The method of claim 7 wherein said surfactant is first added to said hydrocarbon to form a surfactant solution in hydrocarbon and the said water is then added to the said surfactant solution in hydrocarbon and mixed at mixing energy in the range of $0.15 * 10^{-5}$ to $0.15 * 10^{-3}$ kW/liter of fluid.

11. The method of claim 7 wherein said surfactant is first added to said water to form a surfactant solution in water and the said hydrocarbon is then

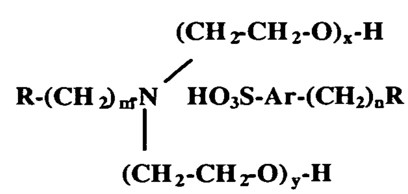
added to the said surfactant solution in water and mixed at mixing energy in the range of $0.15 * 10^{-5}$ to $0.15 * 10^{-3}$ kW/liter of fluid.

12. The method of claim 7 wherein,

- a first surfactant is added to said water to form a first surfactant solution in water,
- a second surfactant is added to said hydrocarbon to form a second surfactant solution in hydrocarbon,
- the first surfactant solution in water is added to the second surfactant solution in hydrocarbon and the first and second surfactant solutions are mixed at mixing energy in the range of $0.15 * 10^{-5}$ to $0.15 * 10^{-3}$ kW/liter of fluid.

13. A bicontinuous microemulsion comprising a coexisting mixture of at least 80-volume % of a water-in-hydrocarbon microemulsion and from 1 to 20 volume % of a hydrocarbon-in-water microemulsion, prepared by mixing at mixing energy in the range of $0.15 * 10^{-5}$ to $0.15 * 10^{-3}$ kW/liter of fluid,

- at least 50wt% of hydrocarbon,
- from 30 to 50wt% of water, and
- from 0.01 to 15 wt% of a surfactant selected from the group consisting of alkyl ethoxylated amine- alkyl aromatic sulfonic acid complex, monoethanol amine-alkyl aromatic sulfonic acid complex and mixtures thereof and represented by the respective formulae,



and

$$OH\text{-}CH_2\text{-}CH_2\text{-}NH_2 \quad HO_3S\text{-}Ar\text{-}(CH_2)_nR$$

wherein R is a methyl group, m and n are integers from about 2 to 25, x and y are integers and x+y is from about 2 to 50 and Ar is an aromatic group.

14. The bicontinuous microemulsion of claim 13 further comprising up to 60 wt% alcohol based on the total weight of the said microemulsion wherein said alcohol is selected from the group consisting of methanol, ethanol, n-propanol, iso-proponal, n-butanol, sec-butyl alcohol, tertiary butyl alcohol, n-pentanol, ethylene gylcol, propylene glycol, butyleneglycol and mixtures thereof.

15. The bicontinuous microemulsion of claim 5 or claim 13 wherein said microemulsion has a viscosity that decreases with decreasing temperature in the temperature range of 15°C to 80°C.

16. The bicontinuous microemulsion of claim 5 or claim 13 wherein said microemulsion has conductivity in the range of 0.5 to 15 mhos at 25°C.

17. The bicontinuous microemulsion of claim 5 or claim 13 wherein said microemulsion is stable up to a temperature of -54°C.

18. A method for preventing corrosion of a metal surface comprising contacting the metal surface with a microemulsion comprising:

- at least 50wt% of hydrocarbon,
- from 30 to 50wt% of water, and

- from 0.01 to 15 wt% of a surfactant selected from the group consisting of, alkyl ethoxylated amine- alkyl aromatic sulfonic acid complex , monoethanol amine-alkyl aromatic sulfonic acid complex and mixtures thereof and represented by the respective formulae,

$$\begin{array}{l} \qquad\qquad\quad (CH_2\text{-}CH_2\text{-}O)_x\text{-}H \\ \qquad\qquad\quad / \\ R\text{-}(CH_2)_m\text{-}N \quad HO_3S\text{-}Ar\text{-}(CH_2)_nR \\ \qquad\qquad\ | \\ \qquad\quad (CH_2\text{-}CH_2\text{-}O)_y\text{-}H \end{array}$$

and

$$OH\text{-}CH_2\text{-}CH_2\text{-}NH_2 \quad HO_3S\text{-}Ar\text{-}(CH_2)_nR$$

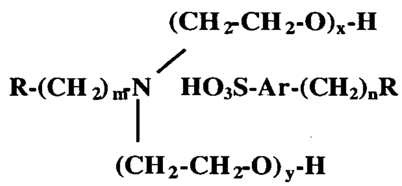
wherein R is a methyl group, m and n are integers from about 2 to 25, x and y are integers and x+y is from about 2 to 50, Ar is an aromatic group, for a time period ranging from 1 second to 3 hours, and at temperatures in the range of -50°C to 100°C.

19. The method of claim 18 wherein the metal surface comprises metallic elements selected from The Periodic Table of elements comprising Group III (a) to Group II(b) inclusive.

20. The method of claim 18 wherein the metal surface is a catalyst surface of a fuel cell system.

21. The method of claim 18 wherein the metal surface is the internal surface of a fuel cell system.

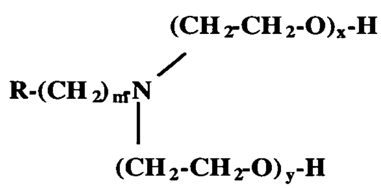
22. The bicontinuous microemulsion of claim 5 or claim 13 wherein the aromatic group Ar is the same aromatic group in the structure



and in the structure

$$OH\text{-}CH_2\text{-}CH_2\text{-}NH_2 \quad HO_3S\text{-}Ar\text{-}(CH_2)_nR$$

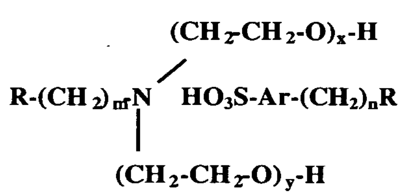
23. The bicontinuous microemulsion of claim 5 or claim 13 wherein the aromatic group Ar is not the same aromatic group in the structure.



and in the structure

$$OH\text{-}CH_2\text{-}CH_2\text{-}NH_2 \quad HO_3S\text{-}Ar\text{-}(CH_2)_nR$$

24. The bicontinuous microemulsion of claim 23 wherein the aromatic group Ar in the structure



is benzene,

and the aromatic group Ar in the structure

$$OH\text{-}CH_2\text{-}CH_2\text{-}NH_2 \quad HO_3S\text{-}Ar\text{-}(CH_2)_nR$$

is naphthalene.